

RASULOV, U.U.

Variability and taxonomic position of some forms of fungi of the
genus Rhizoctonia. Uzb.biol.zhur. no.5:21-30 '59. (MIRA 13:4)

1. Nauchno-issledovatel'skiy institut zashchity rasteniy.
(VOLOSOVO DISTRICT--FUNGI, PHYTOPATHOGENIC)

TALIPOV, Sh.T.; KRUKOVSKAYA, Ye.L.; RASULEVA, Sh.

Solubility of cerium (III) oxalate in solutions of iron (III),
aluminum, and uranyl nitrates at 25°. Uzb.khim.zhur. no.2:18-24 '61.
(MIRA 14:10)

1. Tashkentskiy gosudarstvenny universitet imeni V.I.Lenina.
(Cerium oxalate) (Solubility) (Cations)

NABIYEV, M.N., akademik; VISHNYAKOVA, A.A.; BAZILEV, V.D.; AKMAYEV, Kh.M.;
KAMILOV, A.; RASULEVA, Sh.; ARUTYUNOVA, N.M.

Increasing the degree of phosphate decomposition by a partial
substitution of nitric acid for sulfuric acid and ammoniation of
chamber superphosphate. Uzb.khim.zhur. no.4:3-10 '61.
(MIRA 14:8)

1. Institut khimii AN Uzbekskoy SSR. 2. Akademiya nauk Uzbekskoy
SSR (for Nabihev).
(Phosphates)

YEROSH EKO, A.Ye. (Komsomol'sk-na-Amure); PERIN, V.A.; MATSKO, A.L.;
YUGAY, R.L.; KARASEVA, R.P., zasluzhennyj uchitel' shkoly RSFSR;
RASULEVA, Z.A., uchitel'nitsa

Editor's mail. Geog. v shkole 25 no.5:69-72 S-0 '62.
(MIRA 15:9)

1. Krasnosel'skaya shkola Virmitskoy oblasti (for Matsko).
2. 7-ya shkola g. Volgograda (for Karaseva). 3. 106-ya shkola Kazani (for Rasuleva).

(Geography—Study and teaching)

RASULI, Z.M., dotsent

Copper metabolism in toxemias during the second half of pregnancy. Akush. i gin. 39 no.4:63-66 Jl-Ag'63 (MIRA 16:12)

1. Iz kafedry akusherstva i ginekologii (zav. - dotsent I.Z. Zakirov) i kafedry biokhimii (zav. - dotsent I.G.Priyev) Samarkandskogo meditsinskogo instituta.

ZAKIROV, I.Z., dotsent; RASULI, Z.M., dotsent; FARKHADI, V.F., kand.med.nauk; ABRAMOVA, A.Kh., kand.med.nauk; KHAMIDOV, M.Kh., assistent; KHASANOVA, Z.Sh., ordinatar

Using a vacuum extractor in obstetrical pathology; its superiority over obstetric forceps. Med. zhur. Uzb. no.1: 16-20 Ja '62. (MIRA 15:3)

1. Iz kafedry akusherstva i ginekologii (ispolnyayushchiy obyuzannosti zavoduyushchego - dotsent I.Z. Zakirov) Samarkandskogo gosudarstvennogo meditsinskogo instituta imeni Pavlova.
(OBSTETRICS--APPARATUS AND INSTRUMENTS)

RASULI, Z.M., dotsent; ABRAM'VA, A.Kh., kand. med. nauk; MAKAROVA, L.V.

Two cases of spontaneous uterine perforation in premature labor caused by true placenta accreta. Akush. i gin. 40 no.4:137-138 Jl-Ag '64. (MIRA 18:4)

1. Kafedra akusherstva i ginekologii (zav. - dotsent I.Z.Zakirov) i kafedra fakul'tetskoy khirurgii (zav. - prof. F.M.Golib) Samarkandskogo instituta imeni Pavlova.

ZAKIROV, I.Z., docent; PASULI, Z.M., docent

Effectiveness of some methods of artificial abortion in late periods of pregnancy. Nauch. Study SamMI 22:133-138 '63.
(MIRA 17:9)

1. Iz kafedry akusherstva i ginekologii Samarkandskogo meditsinskogo instituta.

I
RASUL-KHANTOV, A. V. Cand Med Sci -- (diss) "Analysis of stillbirth and
maternity
reducing (On the basis of the materials of obstetric-gynecological clinic of
[SAMARKAND MEDICAL INSTITUTE] Samarkand for seven years (1949-1955)" Samarkand, 1957. 15 pp, 21 cm. (Samarkand
State Med Institute in Academician I. P. Pavlov), 200 copies.

(IT, 20-57, 16)

60

AZIMOV, S.A., BASULKULOV, M.S.

Azimuthal angular distribution of slow particles produced in
nuclear interactions with heavy emulsion nuclei at high energies.
Izv. AN Uz. SSR. Ser. fiz.-mat. nauk 9 no.4. 70-72 '65.

(MIRA 18:9)

1. Institut yadernoy fiziki AN U2SSR.

L 34475-68 EWT(m)/T IJP(c)

ACC NR: AP6016812

(N)

SOURCE CODE: UR/0367/66/003/001/0112/0115

AUTHOR: Azimov, S. A.; Rasulkulov, M. S.; Chudakov, V. M.

ORG: Institute of Nuclear Physics, Academy of Sciences, Uzbek SSR (Institut yadernoy fizik. Akademii nauk Uzbekskoy SSR) B

TITLE: Azimuthal angular distribution of shower particles and gray tracks produced by ~~cosmic ray particles~~ in emulsion

SC: Yadernaya fizika, v. 3, no. 1, 1966, 112-115

TOPIC TAGS: cosmic shower, cosmic ray particle, angular distribution, cosmic ray anisotropy, ~~correlation statistic~~, PARTICLE TRACK

ABSTRACT: This is a continuation of earlier work by the authors group (ZhETF v. 45, 407, 1963) where a procedure was developed for observing different correlations in the azimuthal angular distribution. The present article is devoted to the azimuthal angular distribution of gray tracks of shower particles in stars produced in emulsion by singly charged particles, and satisfying the selection rules $n_h + n_g > 15$, $n_s \geq 10$ ($n_h + n_g$ - number of strongly ionized particles, n_s - number of shower particles). A gray track is defined as one with a grain density larger than $1.4g_0$ (g_0 - grain density of fast-electron track) and a range larger than 2.5 mm, corresponding to a proton kinetic energy not lower than 25 Mev. The investigation covered 33 showers of ~50 Gev energy. The procedure involves introduction of specially defined random quantities, the mean values of which are determined separately for the shower

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L 34475-66

ACC NR: AP6016812

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particles and for the gray tracks. From the distribution of the showers relative to these random quantities, it is concluded that the shower particles as well as the gray tracks exhibit azimuthal asymmetry. Furthermore, there is a tendency for these two groups of particles to be emitted in opposite directions. The observed effects are qualitatively explained by using the concept of development of an intranuclear cascade. The authors thank I. M. Gramenitskiy for a discussion of the work, and Sh. Abduzhamilov, L. P. Chernova, and G. M. Chernov for measuring the shower-particle emission angles. Orig. art. has: 3 figures, 5 formulas, and 1 table.

SUB CODE: 20/ SUBM DATE: 04May65/ ORIG REF: 003

Card 2/2 8.2

ACC-NR: A160181

SOURCE CODE: UL

AUTHOR: Azimov, S. A.; Rasulkulov, M. S.

ORG: Nuclear Physics Institute, AN UzSSR (Institut yadernoy fiziki AN UzSSR)

TITLE: Azimuthal angular distribution of the slow particles produced in nuclear interactions with heavy emulsion nuclei in the presence of high energies

SOURCE: AN UzSSR. Izvestiya. Seriya fiziko-matematicheskiy, 1972, No. 70-72

TOPIC TAGS: angular distribution, heavy nucleus, particle interaction, nuclear collision

ABSTRACT: The authors present the results of an investigation of the azimuthal angular correlations of slow particles in showers formed on the interaction between singly charged high-energy cosmic-ray particles and heavy emulsion nuclei ($n_g + n_h \geq 15$, $n_g \geq 15$) by a method better than that originally employed by the Polish scientists Bogdanowicz and Ciok (Nucl. Phys., 40, 1963, 270) who investigated the distribution of the slow ("gray," "gray and black," n_h) particles formed by nuclear interactions with heavy emulsion nuclei in the presence of high energies. The authors divided the slow particles for each shower into "gray" and "black" tracks, calculating for each shower the Lorentz factor of the center-of-mass system as well as the azimuthal correlation of angular distribution of the slow particles β_c . On this basis

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L 39863-46

ACC NR: AP/018116

and on the basis of the tabulated findings, it is established that contrary to previous assumptions, all lines with a large number of slow particles displaying a generally high multiplicity of the generation of fast (n_s) particles cannot be regarded as central collisions between a fast particle and heavy nuclei. It is postulated that the azimuthal asymmetry of "gray" tracks is a consequence of an intranuclear cascade in the presence of noncentral nuclear interactions with heavy nuclei of emulsion. Orig. art. Russ. 10 pages and 4 formulas. [JPRS]

SUB CODE: 20 / SUBM DATE: 21May64 / ORIG REF: 004 / C/N RDP:

Card 2/2 A/S

NAPODITSKIY, A.D.; NIKIFOROVA, L.M.; KHALIULIN, M.G.; RASULMUKHAMDOVA,
D.A.; CHERNOMORCHENKO, S.G.; MUSHKAREV, V.G.

Thermal sputtering of certain grid coatings and their effect on
the performance of radio tubes with oxide cathodes. Izv. AN
Uz. SSR. Ser. fiz.-mat. nauk 9 no.2:48-53 '65.

(MIRA 18:6)

1. Tashkentskiy gosudarstvennyy universitet imeni Lenina.

• 3(5) SOV/112-59-1-1312

Translation from: Referativnyy zhurnal. Elektrotehnika, 1959, Nr 1, p 177 (USSR)

AUTHOR: Rasulov

TITLE: Magnetic Voltage Regulator With a Self-Magnetization Intended for Small and Medium Synchronous Generators

PERIODICAL: Izv. AN Azerb SSR, 1957, Nr 2, pp 37-44 (Original in Azerbaijani, summary in Russian)

ABSTRACT: A great number of small and medium power synchronous generators with rotating excitors and without voltage regulation are being operated in various industries. In this connection, the development of a simple and reliable scheme with a self-magnetizing reactor for voltage regulation is of interest. The principle of such a voltage regulator is this: a series-connected reactor exciter field winding is fed from the synchronous-generator terminals. (Translator's note: One or more lines are missing in the Russian original.) As the generator voltage varies, the regulator changes the exciter

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Magnetic Voltage Regulator With a Self-Magnetization Intended for Small and . . .

field current tending to maintain the generator voltage constant. A distinguishing feature of the scheme is that a positive reactor-load current feedback is introduced into the reactor circuit. This feedback raises reactor sensitivity and output. Advantages of the new reactor-type voltage regulator are: (1) the regulator scheme is simple and reliable; mounting and adjusting the regulator can be carried out quickly; no preparatory or supplementary work is needed; (2) the positive-load-current feedback ensures an automatic stabilizing of the regulating system and an alignment with a negative proportional band of a < 5%; this helps in stabilizing operation of the synchronous generator. The above voltage regulator can be recommended for small and medium (up to 1,000 kw) synchronous generators having rotary excitors. From the author's summary.

Card 2/2

ACC NR: AP7001981

SOURCE CODE: GE/0030/66/018/002/0911/0922

AUTHOR: Guseinov, G. D.; Rasulov, A. I.

ORG: Institute of Physics, Academy of Sciences of the Azerbaijan SSSR, Baku

TITLE: Heat conductivity in gallium selenide single crystals

SOURCE: Physica status solidi, v. 18, no. 2, 1966, 911-922

TOPIC TAGS: single crystal, heat conductivity, gallium selenide

ABSTRACT: The thermal conductivity of laminated GaSe single crystals was studied in two crystallographic directions within the 90--600K range. Thermal conductivity was determined as highly anisotropic; in the direction parallel to the layers it exceeds conductivity in the direction perpendicular to the layers by almost one order of magnitude. The mean free path of the acoustic phonons is calculated from experimental data on lattice heat conductivity, sound velocity, and heat capacity. The mean free path in a direction perpendicular to the layers

($l_{ph}^{\perp} = 16.8 \times 10^{-8}$ cm) was found to be limited to the thickness of the Se-Ga-Se quadruple layers corresponding here to the lattice parameter ($c = 16.883 \text{ \AA}$). The mean free path in a direction parallel to the layers ($l_{ph}^{\parallel} = 0.5 \times 10^{-8}$ cm), exceeds

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ACC NR: AP7001981

the corresponding parameter ($a = 3.734 \text{ \AA}$) by one order of magnitude. Within the high temperature range heat transfer was found to be effected by internal electromagnetic radiation. A study was made of the effect of unilateral compression in the direction of a weak van der Waals bond (0001) both on the lattice and the photon components of thermal conductivity in GaSe single crystals. [Authors' abstract].

[DW]

SUB CODE: 20/SUBM DATE: 22Aug66/ORIG REF: 008/OTH REF: 018/

Card 2/2

ACC NR: AP7003905

SOURCE CODE: GE/0030/67/019/001/K007/K010

AUTHOR: Guseinov, G. D.; Rasulov, A. I.; Kerimova, E. M.; Ismailov, M. Z.

ORG: Institute of Physics, Academy of Sciences of the Azerbaijan SSR, Baku

TITLE: Heat conductivity of Al_{III} B_{VI}-type semiconductors

SOURCE: Physica status solidi, v. 19, no. 1, 1967, K7-K10

TOPIC TAGS: heat conductivity, semiconductor crystal, high temperature effect, activation energy, exciton, crystal anisotropy

ABSTRACT: The result of experimental investigations of the heat conductivity of crystals of Al_{III} B_{VI} compounds over a wide temperature range at different crystallographic directions are given. In the region of comparatively low temperatures, the total measured heat conductivity of almost all Al_{III} B_{VI} compounds corresponds to the net lattice heat conductivity. The possible electronic components, shown by calculations, is quite negligible in this region, while the order of magnitude of the calculated values of the lattice heat conductivity coincides with that of the measured values of the heat conductivity. The relation-

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ACC NR: AP7003905

ship of the temperature-heat conductivity of GaS single crystals obtained from gallium monochalcogenides is somewhat weaker than should be expected from the theory of lattice heat conductivity. The heat conductivity of TlS and TlTe crystals decreases with an increase of temperature. The heat conductivity of GaS, GaSe, GaTe, InS, and InSe crystals increases at high temperatures ($T > 380$ to 490°K) due to the appearance of additional heat conductivity. This additional portion of the total heat conductivity increases exponentially for InS and InSe crystals within the high-temperature range $T > 400$ to 480°K , and for GaSe and GaTe up to a certain temperature. According to electrical measurements, the intrinsic conductivity region for the above crystals was not received within the temperature range investigated. The exponential increase and the low value of the activation energy within this range is transferred by excitons. Sharp anisotropy of the heat conductivity is representative of laminated A^{III} B_{VI} crystals over the whole temperature range investigated. The authors thank Professor G. B. Abdullaev for his valuable advice. Orig. art. has: 1 figure.

[NT]

SUB CODE: 20/SUBM DATE: 23Nov66/ORIG REF: 006/OTH REF: 003/

Card 2/2

RASULOV, A.M.; VENIKOVSKIY, A.S.

Investigating the adsorption of hydrocarbon gases under pressure.
Gaz. prom. 10 no.1:45-48 '65.

(MIA 18:1)

L 53610-65 EWT(m)/EPF(c)/T Pr-4 DJ
ACCESSION NR: AP5016258

UR/0065/64/000/012/0011/0015

AUTHOR: Rasulov, A. M.; Chernoshukov, N. I.; Kuliayev, R. Sh.; Sadykhova, B. A.

TITLE: Production of oils by the method of destructive hydrogenation 18

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 12, 1964, 11-15 15

TOPIC TAGS: catalysis, temperature, hydrogenation, petroleum refining, petroleum refinery product

Abstract: The influence of temperature and catalyst on the yield and quality of destructive hydrogenation products of the deasphaltate of petroleum of the Neftyanyye Kamni Deposit was investigated. Raising the temperature of the hydrogenation process on the catalysts WS₂ and Al-Co-Mo leads to an improvement of the qualities of the hydrogenate obtained. Optimum temperature for the hydrogenation of deasphaltate of Neftyanyye Kamni crude with a coking quality of 2% in the production of high-quality oils is 435°C with WS₂ catalyst and 465°C with Al-Co-Mo catalyst. The WS₂ catalyst was found to be more effective than the catalyst Al-Co-Mo. The catalyst WS₂ makes it possible to carry out the hydrogenation at

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L 53610-65

ACCESSION NR: AP5016258

relatively low temperature and to obtain oils with better quality and in higher yield (more than 18% of the crude). The aviation oil produced by hydrogenation on the WS₂ catalyst contains more of the methane-naphthenic hydrocarbons and less of the light and medium aromatic hydrocarbons than oil produced on the Al-Co-Mo catalyst. Oil produced on WS₂ contains no heavy aromatic hydrocarbons, but does contain 1% of the intermediate fractions of aromatic hydrocarbons. The investigated oils contain approximately the same amount of resinous matter. Orig. art. has 2 graphs and 5 tables.

ASSOCIATION: INKhP AN Azerb. SSR

SUBMITTED: 00

ENCL: 00

SUB CODE: FP, 00

NO REF Sov: 000

OTHER: 000

JPRS

Card 2/2

RASULOV, A.M.

Desorption of propane and octane from adsorbents. Izv. vys. ucheb. zav.; neft' i gaz 6 no.11/75-78 '63. (MIRA 17;9)

1. Azerbaydzhanskiy institut nafti i khimii im. M.Azizbekova.

RASULOV, A.M., CHERNOVYUKOV, N.I., KUL'CHEV, P.Ghe, SADYKROVA, B.B.

Effect of the depth of the detarring of crude residue on
the hydrogenation and quality of the lubricant fractions
obtained. Khim. i tekhn. topil. i masei 9 no.9 29-33 S '64.
(MIRA 17/10)

RASULOV, A.M.

Temperature and time dependence of the tensile strength of
polyethylene. Uch. zap. AGU. Ser. fiz.-mat. i khim. nauk no.5:
129-136 '61. (MIRA 16:6)
(Polyethylene--Testing)

RASULOV, A.M.

Effect of iodine additions on the photoelectric properties of
selenium. Uch. zap. AGU, Ser. fiz.-mat. i khim. nauk no.2:
35-42 '61. (MIRA 16:7)

RASULOV, A.M.; RZAYEVA, F.A.

Rupture of rubber under a constant load. Uch. zap. AGU. Ser.
fiz.-mat. i khim. nauk no.2:25-33 '61. (MIRA 16:7)

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

RACHOV, A.M., AND V.A.

New method of determining iodine in the thyroid gland of hirzon
ratites in different periods of their embryonic development. Nauch.
trudy SamMI 21:186-194 '62. (MIRA 27:5)

16. 16 gafandy tlokhini Samarqandskogo meditsinskogo instituta
Imeni Pavlova.

GULIAMOV, Solekh; RASULOV, D., obshchiy red.

[Party organizations in Tajikistan and problems of cotton growing] Partiinyye organizatsii Tadzhikistana i voprosy khlopkovodstva. Stalinabad, Tadzhikskoe gos.izd-vo, 1959. 150 p.

(MIRA 12:11)

(Tajikistan--Cotton growing)

GULYAMOV, S.; KOVNATSKIY, S.; RASULOV, D.

Developments in passenger traffic. Avt. transp. 42 no.10:
12-14 O '64. (MIRA 17:11)

1. Nachal'nik upravleniya passazhirskikh perevozok Ministerstva avtotransporta i shosseynykh dorog Uzbekskoy SSR (for Gulyamov).
2. Zamestitel' nachal'nika upravleniya perevozok Ministerstva avtotransporta i shosseynykh dorog Moldavskoy SSR. (for Kovnatskiy).
3. Direktor Ashkhabadskogo passazhirskogo avtoparka No.3004 (for Rasulov).

RASULOV, D.A.

Transformation of potassium in some types of soils of the Daghestan
A.S.S.R. Dokl. AN Azerb. SSR 21 no.4:51-54 '65.

(MIRA 18:7)

1. Institut pochvovedeniya i agrokhimii AN AzerSSR.

USSR/Technical Crops. Oil Plants. Sugar Plants.

M

Abs Jour: Ref Zhur-Eicr., No 17, 1958, 77758.

Author : Rasulov, D.P.

Inst :

Title : Leading Methods of Cotton Cultivation at Home and
Abroad.

Orig Pub: V sb.: Materialy Ob"yedin. nauchn. sessii po
khlopkvodstvu, T.I. Tashkent, Gosizdat UzSSR,
1958, 97-107.

Abstract: No abstract.

Card : 1/1

105

USSR/Cultivated Plants. Technical Plants. Oil and H
Sugar Leaching Plants.

Abs Jour : Ref Zhur-Biol., No 15, 1953, 68268

Author : Rasulov, D. R.

Inst :

Title : Forty Years of Soviet Cotton and Prospects
for the Near Future.

Orig Pub : V sb.: Khlepkovodstvo v SSSR, Moskva, Sel'khoz-
giz, 1953, 3-42

Abstract : No abstract.

Card : 1/1

MARKOSYAN, A.A.; MARDZHANYAN, G.M., kand. biolog. nauk; KARYAN, A.A., aspirant;
SHARAFUTDINOV, Sh.A.; RASULOV, F.K.; SVANIDZE, N.V., starshiy nauchnyy
sotrudnik ; RABINOVICH, I.M., starshiy nauchnyy sotrudnik; DERYABIN,
V.I.; SULEYMANOV, I., mladshiy nauchnyy sotrudnik; SHEVTSOV, S.I.,
starshiy nauchnyy sotrudnik (TSelinnyy kray)

From the practices in the use of poisonous chemicals. Zashch. rast.
ot vred. i bol. 9 no.9:21-23 '64. (MIRA 17:11)

1. Armyanskiy institut zemledeliya (for Markosyan, Mardzhanyan, Karyan).
2. Sredneaziatskiy institut zashchity rasteniy (for Sharafutdinov, Rasulov).
3. Zakavkazskaya opytnaya stantsiya Vsesoyuznogo nauchno-issledovatel'skogo instituta lekarstvennykh i aromaticheskikh rasteniy (for Svanidze, Rabinovich).
4. Zaveduyushchiy otdelom zashchity rasteniy Samarkandskoy opytnoy stantsii (for Deryabin).
5. Samarkandskaya opytnaya stantsiya (for Suleymanov).

Name: RASULOV, F.

Dissertation: Productivity of species and hybrids of the mulberry silkworm with accelerated methods of feeding

Degree: Cand Agr Sci

~~Defended at~~ AFFILIATION: Min Higher Education USSR, Tashkent Agricultural Inst

~~Publication~~ Defense Date, Place: 1956, Tashkent

Source: Knizhnaya Letopis', No 45, 1956

Rasulov, F.
USSR/Farm Animals - Silkworm.

Q-6

Abs Jour : Ref Zhur - Biol., No 7, 1958, 31039

Author : Rasulov F.

Inst : -

Title : Productivity of the Breeds and Hybrids of the Mulberry-Feeding Silkworm with the Use of Rapid Methods of Feeding.
(Produktivnost' porod i gibridov tutovogo shelkopyryada
pri skorostnykh metodakh vykormki).

Orig Pub : Stos. s. kh. Uzbekistana, 1956, No 12, 61-65.

Abstract : The feeding of silkworms under conditions prevailing in Uzbekistan was carried out according to the method of Kh. Tishayeva in the first 2 growth periods at the temperature of 30°C and a relative humidity of the air of 50-55%; the method of A. Sultanova, using a temperature of 28°C and a relative humidity of 50-60%, and an intermediate method between the latter and the control, were also applied. The hybrids of the white-cocoon breeds, with

Card 1/2

RABULOV, G.L.

Some characteristics of the geology of the southern margin of the
middle Kura Lowland in the borders of the Khrami and Gyandzhachay
Valleys. Uch. zap. AGU. Ser. geol. - geog. nauk no.3:63-70 '63.
(MIRA 17:11)

RASULOV, G.L.

Possible oil- and gas-bearing series and a plan for further prospecting within the boundaries of the Kura Valley in western Azerbaijan. Dokl. AN Azerb. SSR 20 no.2:39-41 '64. (MIRA 17:6)

1. Institut geologii AN AzerSSR. Predstavлено академиком AN AzerSSR.
A.D.Sultanovym.

RASULOV, I.Kh., aspirant

Immunobiologic characteristics of *Theileria annulata* strains.
Veterinariia 40 no.6:52-53 Je '63. (MIRA 17:1)

1. Uzbekskiy nauchno-issledovatel'skiy veterinarnyy institut.

II, P.N., cand. veter. nauk; MASJLOV, I.M., aspirant

Change in morphological and virulent properties of the
pathogen of Theileria annulata (Buchowsky et Luh, 1904) during preservation in vitro. Sbor. nauch. rab.
Seri. TVN 6:127-135 '63.

Strains of Theileria annulata (Buchowsky et Luh, 1904). Ibid.:136-149

(MIRA 18:11)

RASULOV, I.R.

Porous aggregate of local argillaceous-micaceous shale. Izv.AN
Uz.SSR no.7:91-93 '56. (MIRA 14:5)
(Shale) (Aggregates (Building materials))

RASULOV, I.R.

Principles of effective firing of local clays and clay shale
in rotary furnaces to produce keramzit. Izv.AN Uz.SSR.Ser.
tekhnauk no.1:51-56 '60. (MIRA 13:6)

1. Tashkentskiy nauchno-issledovatel'skiy institut po stroitel'-
stvu Akademii stroitel'stva i arkhitektury SSSR.
(Clay) (Aggregates(Building materials))

RASULOV, I. R.

A method for determining the coefficient of expansibility of grains of keramzit under industrial conditions. Sbor. nauch. trud. NII po stroi. ASIA no.1:99-104 '61.

(MIRA 16:1)

(Keramzit)

15-57-5-6556

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 5,
p 122 (USSR)

AUTHOR: Rasulov, I. R.

TITLE: Porous Aggregate for Light Concrete From Local Clay-Mica Shales (Poristyy zapolnitel' dlya legkikh betonov iz mestnogo glinisto-slyudistogo slantsa)

PERIODICAL: Izv. AN UzSSR, 1956, Nr 7, pp 91-93

ABSTRACT: It is well known that a variety of easily fusible clays and shales is used to obtain artificial porous filler. Shales from the Milutinsk deposit (Tashkent region) have been tested for the manufacture of porous aggregate for light concrete. River sand was also used, and portland cement, brand "300," as a binder. By replacing natural sand by porous aggregate, the bulk weight of the concrete was lowered to 1000 kg/m^3 , and the yield strength was reduced to 50 kg/cm^2 . This

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15-57-5-6556

Porous Aggregate of Light Concrete (Cont.)

kind of cement may be recommended for wall material.
Card 2/2

S. P. Sh.

RASULOV, I.R.

Swollen clay- mica shale used as a filler in lightweight concrete.
Dokl. AN Uz. SSR no.8:41-45 '57. (MIRA 11:5)

I.Institut sooruzheniy AN UzSSR. Predstavлено akad. AN UzSSR M.T.
Urazbayevym.
(Lightweight concrete)

: RASULOV, Kh.A.; RASULOV, Kh.A. (Terkva)

Foreign body retained in the lungs for a period of 20 years.
Arkh. pat. 27 no.6:79-81 '65. (MIRA 19:1)

1. Laboratoriya geograficheskoy patologii Instituta morfologii cheloveka (direktor - deystvitel'nyy chlen AMN SSSR prof. A.P. Avtysyn) AMN SSSR I Respublikanskaya klinicheskaya tuberkuleznaya bol'ница No.1 (glavnnyy vrach Kh.A. Rasulov). Submitted March 4, 1964.

ASULOV, Kh.Kh., Ispeinyayushchiy obyazannosti doktora, FOYGL'MAN,
A.Ya., assistant

Method of vasography in vascular diseases of the extremities.
Nauch. trudy SamMI 22:97-99 '63. (MIRA 17:9)

I. Iz kliniki gospital'noy khirurgii Samarkandskogo meditsinskogo
instituta.

KHAYDAROV, A.Kn., prof.; RASULOV, Kh.Kh., ispolnyayushchiy otsyzannosti dotsenta

Primary cranioplasty by means of plexiglas in cranial traumas.
Nauch. trudy SamMI 22:107-111 '63. (MIRA 17:9)

I. Iz kafedry gospital'noy khirurgii Samarkandskogo meditsinskogo instituta.

RASULOV, K.

Let us improve the work of rural savings banks. Fin.SSSR 18
no.6:59-62 Je '57. (MIRA 10:12)

1. Zamestitel' nachal'nika Upravleniya gostrudsberkass i goskredita
Uzbekskoy SSR.
(Uzbekistan--Savings banks)

RASULOV, A.M., Cand. Biol. Sci. --(diss)" Experience of ~~cultivation~~
~~with~~ irrigation ~~the~~ saline soils of Central Fergana." Tashkent, 1959.
19 pp (Inst. of Soil Science UzSSR. Inst. of Soil Science), 17 copies
(#1, 30-53, 119)

-17-

LJ
YATSOZHINSKIY, Yu.D.; KIMYACAROV, Ya.E.; KRAULIS, V.Yu.; RASULOV, Kh.A.

Results of 100 resections of the lungs. Zdrav. Tadzh. 8 no.6:10-13
N-D '61. (MIR 15:1)

1. Iz kafedry tuberkuleza Tadzhikskogo meditsinskogo instituta
imeni Abuali ibni Sino i Respublikanskoy klinicheskoy tuberkuleznoy
bol'nitsy Tadzhikskoy SSR.
(LUNGS—SURGERY)

RASULOV, M.

Pollination of the cotton plant by insects. Uzb. biol. zhur. no.1:
32-35 '61. (MIRA 14:3)

1. Andizhanskiy gosudarstvennyy pedagogicheskiy institut.
(COTTON) (FERTILIZATION OF PLANTS) (BEES)

RASULOV, M.

Role of honey and solitary wild bees in pollinating alfalfa.
Dokl.AN Uz.SSR no.11:57-59 '59. (MIRA 13:4)

1. Andizhanskiy gospodinstitut. Predstavлено членом-корр.
AN UzSSR V.V.Yakhontovym.
(Alfalfa) (Samarkand Province--Bees)
(Fertilization of plants)

USA/Mathematics - Mixed Problems

May/Jun 52

"Investigation of a Numerical Method for Solving Certain Mixed Problems For Differential Equations,"
M. L. Rasulov, Baku

"Matemat Sborn" Vol XXX (72), No 3, pp 509-526

Discusses the problem of generalizing the Fourier method (spectral analysis of linear operators) to the case of non-normal differential operators and indicating conditions governing applicability of this generalizing scheme to the soln of mixed problems. Discusses Green's functions; asymptotic

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representations; expansion of an arbitrary function; applications; evaluation of an expansion. Gives the reference: G. D. Birkhoff, "On the Asymptotic Character of the Solutions of Certain Linear Differential Equations Containing a Parameter," Tran Amer Math Soc, 9, 1908.
Submitted 6 Feb 51.

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RASULOV, M.L.

Math

Rasulov, M. L. Expansion of an integrable function in the fundamental functions of a boundary problem of an ordinary differential equation. Izv. Akad. Nauk Azerbaidžan. SSR. 1953, no. 6, 3-28. (Russian. Azerbaijani summary)

The boundary-value problem considered concerns the n th order differential equation

$$(*) \quad \sum_{i=0}^{n-1} P_i(x, \lambda) y^{(n-i)}(x, \lambda) = f(x),$$

$$P_0(x, \lambda) = 1, \quad a_1 \leq x < a_{m+1},$$

with coefficients continuous except for finite jumps at the m points $a_i, i=2, \dots, m+1, a_1 < a_2 < \dots < a_{m+1}$. The boundary conditions imposed are

$$\sum_{k=1}^n \sum_{i=1}^n \{ \alpha_{i,j}(k)(y_k^{(i-1)}(a_k, \lambda) + \beta_{i,j}(k)y_k^{(i-1)}(a_{k+1}, \lambda)) \} = 0,$$

$i=1, \dots, m$, where y_k denotes a solution of (*) on (a_k, a_{k+1}) . The investigation consists of a generalization of the classical treatment of the problem which is the restriction of the one above to a single interval (a_k, a_{k+1}) . Analogous results are obtained. A Green's function is

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Rasulov, M. L.

determined and is shown to be a meromorphic function of λ provided the coefficients of (*) and the α 's and β 's are analytic in λ with the rank of the mn by $2mn$ matrix of the α 's and β 's being mn . A necessary and sufficient condition for the existence of a solution to the problem at $\lambda=\lambda_0$ is given. Assuming that (i) $P_t(x, \lambda)=P_t^{(1)}(x, \lambda)$ on (a_j, a_{j+1}) , $P_t^{(1)}(x, \lambda)=\lambda^j \sum_{k=0}^j p_{t,k}^{(1)}(x) \lambda^{-k}$ on (a_j, a_{j+1}) where the $p_{t,k}^{(1)}(x)$ are suitably differentiable, (ii) the roots of the characteristic equation of (*) are distinct on each interval, and (iii) the rank of the matrix of α 's and β 's is mn while the α 's and β 's themselves are polynomials in λ of degree no greater than n , the author proves theorems concerning the rate of growth of the eigenvalues, the asymptotic expansion of the Green's function, and the expansion of an integrable function in terms of the Green's function and certain of its partial derivatives.

N. D. Kazarinoff (Lafayette, Ind.).

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RASULOV, M. B.

Differential Equations, Ordinary Differential Equations (1647)

Izv. AN Azerb. SSR, No 6, 1953, pp 3-32

Rasulov, M. I.

"Expansion of an Integrable Function in Main Functions of a Boundary Problem for an Ordinary Differential Equation"

Considers a differential equation of the order with continuous coefficients. Constructs a Green function based on linearly independent boundary conditions. Derives a formula for the expansion of any integrable function in main functions of that particular boundary problem.

SO: Referativnyy Zhurnal--Matematika, No 1, Jan 54; SO; (W-30785, 28 July 1954)

Rasulov, M.L.

124-1957-10-11792

Translation from. Referativnyy zhurnal. Mekhanika, 1957, Nr 10, p 87 (USSR)

AUTHOR: Rasulov, M.L.

TITLE: On a Problem in Subterranean Hydromechanics (Ob odnoy zadache podzemnoy gidromekhaniki)

PERIODICAL: Nauch. zap. L'vovsk. politekhn.in-ta, 1956 (1957), Nr 38,
pp 66-89

ABSTRACT: The Author examines the problem of the restoration of the hydrostatic pressure in a stratum, utilizing the arrangement of I.A. Charnyy, after the pumping out of a well has ceased. Here it is assumed that a well of radius a is located at the center of a circular stratum which is divided by a concentric peripheral surface into two annular zones of different permeability. An elastic regimen, as defined by Fourier's equation, is assumed to prevail within the stratum. The initial conditions are assumed in the form of arbitrary functions $\varphi(r)$, which are different in the two zones of the stratum and, together with their derivatives, continuous up to the second order. The boundary conditions are taken as follows. A condition of the first type (pressure $p_k = \text{const}$) prevailing along the outer contour:

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124-1957-10-11792

On a Problem in Subterranean Hydromechanics

of the layer, conditions of the fourth type (continuity of pressure and of flow) at the division boundary between the zones of different permeability, and, at the surface of the well, a condition of the form

$$\frac{\partial p_1(a,t)}{\partial r} + \alpha \frac{\partial p_1(a,t)}{\partial t} = 0 \quad (1)$$

where $p_1(r, t)$ is the pressure in the first zone of the layer adjacent to the well; $\alpha = \text{const}$. Condition (1) takes into account the filling up of the well with fluid in the process of re-establishing pressure in the stratum after the termination of the pumping-out activity. The Author divides this problem into two ancillary problems, namely, a) under non-uniform boundary conditions and zero initial conditions, as indicated above; b) under uniform boundary conditions ($p_k = 0$) and initial conditions other than zero. Further, a general scheme is presented for the application of the subtraction method to the solution of mixed problems of similar type, and theorems on the existence of a solution for the above identified ancillary problems are demonstrated.

N. N. Verigin

Card 2/2

RASULOV, M.L.

~~RASULOV, M.L.~~

Difference method in solving boundary and mixed problems of
differential equations. Izv. AN Azerb. SSR no.12:3-16 D '57.
(MIRA 11:2)

(Differential equations)
(Difference equations)

3400
S/044/62/000/002/053/092
C111/C444

AUTHOR: Rasulov, M. L.

TITLE: On the method of residues in the solution of mixed problems

PERIODICAL: Referativnyy zhurnal, Matematika, no. 2, 1962, 109-110,
abstract 2B482. ("Teor. i prikl. matem." Vyp. I. L'vov,
L'vovsk. un-t, 1958, 166-172)

TEXT: Let X, Y be Banach spaces. The equation

$$\sum_{k=0}^q A_k \frac{\partial^k u}{\partial t^k} = f(t)$$

is solved under the conditions

$$\sum_{k=0}^q B_k \frac{\partial^k u}{\partial t^k} = 0$$

(in the applications this will play the part of the boundary condition)
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C111/C444

On the method of residues in the . . .

and

$$\frac{d^k u}{dt^k} \Big|_{t=0} = A_k (k = 0, 1, \dots, q-1)$$

Here $u = u(t)$, $f(t)$ are vector functions of the real parameter $t \in [0, T]$ with values in X ; A_k are linear - generally unbounded - operators from X in X ; B_k are linear operators from X in Y ; one assumes that A_k and B_k commute with the differential operator with respect to t . For the solution one uses the Laplace transformation; then the formal solution $u(t)$ is written down as a certain curve integral. In a number of concrete special cases the method is founded.

[Abstracter's note: Complete translation.]

Card 2/2

RASULOV, M.L.

Residual method for solving boundary and mixed problems of differential equations. Izv. An Azerb.SSR. Ser. Fiz-tekh. i khim. nauk no.1:3-12 ' 58. (MIRA 12:3)

(Differential equations, Partial) (Fluid mechanics)
(Heat--Transmission)

AUTHOR: Rasulov, M.L. (L'vov) 20-119-3-13/65
 TITLE: On an Expansion Formula for an Arbitrary Function (Ob odnoy formule razlozheniya po izvol'noy funktsii)
 PERIODICAL: Doklady Akademii Nauk, 1958, Vol 119, Nr 3, pp 450-453 (USSR)

ABSTRACT: Let the system

$$(1) \frac{dy_k^{(i)}}{dx} - \sum a_{kj}^{(i)}(x, \lambda) y_j^{(i)} = f_k^{(i)}(x), \quad x \in (a_i, l_i)$$

($i = 1, \dots, m$; $k = 1, \dots, n$)

be given with piecewise smooth coefficients $a_{kj}^{(i)}(x, \lambda)$ and the boundary conditions

$$(2) \sum_{i=1}^m \sum_{j=1}^n \left\{ \alpha_{kj}^{(i)}(\lambda) y_j^{(i)}(a_i) + \beta_{kj}^{(i)}(\lambda) y_j^{(i)}(b_i) \right\} = 0$$

where

$$a_{kj}^{(i)}(x, \lambda) = \lambda a_{kj}^{(i)}(x) + \sum_{\nu=0}^N \lambda^{-\nu} a_{kj}^{(i)}(x), \quad \text{and } \alpha_{kj}^{(i)}(\lambda),$$

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On an Expansion Formula for an Arbitrary Function 20-119-3-13/65

$s_{kj}^{(i)}(\lambda)$ are polynomials. The (a_i, b_i) are non-overlapping intervals with common end points. With the aid of the method of Wilder [Ref 3] the author shows numerous suppositions that there exists a sequence of closed increasing contours Γ_ν ($\nu = 1, 2, \dots$), so that for each vector function $f^{(i)}(x)$ with the components $f_k^{(i)}(x) \in L_2(a_i, b_i)$ it holds (in the metric $L_2(a_i, b_i)$)

$$\left| -\frac{1}{2\pi\sqrt{-1}} \int_{\Gamma_\nu} y^{(i)}(x, \lambda) d\lambda \right| \Rightarrow (A^{(i)}(x))^{-1} f^{(i)}(x) \text{ for } \nu \rightarrow \infty.$$

Here $A^{(i)}(x)$ is the matrix of the functions $a_{kj}^{(i)}(x)$ and $y^{(i)}$ the solution of (1), (2). There are 5 references, 2 of which are Soviet, and 3 American.

ASSOCIATION: Lvovskiy gosudarstvennyy universitet imeni Ivana Franko
(Lvov State University imeni Ivan Franko)

PRESENTED: November 20, 1957, by S.L. Sobolev, Academician

SUBMITTED: November 18, 1957

Card 2/2

AUTHOR: Rusulov, M. L. (Lvov)

V.20-120-1-7/C:

TITLE: Method of Residua for the Solution of Mixed Problems and Some Expansion Formulas Connected With it (Vychetnyy metod resheniya smeshannykh zadach i nekotoryye s nim svyazannyye formuly razlozheniya) SSSR

PERIODICAL: Doklady Akademii nauk, 1958, Vol 120, Nr 1, pp 33-36 (USSR)

ABSTRACT: The author considers the system

$$(1) \quad \frac{\partial u_j^{(i)}}{\partial t} = u_{j+1}^i \quad (j=0, 1, \dots, q-2), \quad \frac{\partial u_q^{(i)}}{\partial t} = \sum_{k=q-1}^{mk+l \leq p} A_{kl}^{(i)}(x) \frac{\partial^l u_k^{(i)}}{\partial x^l} + f^{(i)}(x, t) \quad x \in (a_i, b_i), \quad i=1, 2, \dots, n$$

with the boundary conditions

$$(2) \quad \sum_{i=1}^n \sum_{k \leq q-1}^{1 \leq p-1} \left\{ \alpha_{kl}^{(i)} \frac{\partial^l u_k^{(i)}}{\partial x^l} \Big|_{x=a_i} + \beta_{kl}^{(i)} \frac{\partial^l u_k^{(i)}}{\partial x^l} \Big|_{x=b_i} \right\} + \\ + \sum_{i=1}^n \sum_{l=0}^{p-1} \left\{ \alpha_{ql}^{(i)} \frac{\partial^{l+1} u_k^{(i)}}{\partial t \partial x^l} \Big|_{x=a_i} + \beta_{ql}^{(i)} \frac{\partial^{l+1} u_k^{(i)}}{\partial t \partial x^l} \Big|_{x=b_i} \right\} = 0$$

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Method of Residua for the Solution of Mixed Problems and Some Expansion Formulas Connected With it SOV/20-120-1-7/63

and the initial conditions

$$(3) \quad u_k^{(i)}(x,0) = \varphi_k^{(i)}(x) \quad \text{for } x \in (a_i, b_i)$$

Here $A_{kl}^{(i)}(x)$ are quadratic matrices of the order r ; $\alpha_{kl}^{(i)}$,

$s_{kl}^{(i)}$ are constant matrices of the form $n \times p \times p$; $p=mq$; (a_i, b_i) are nonoverlapping intervals with common ends.

Under very numerous suppositions the author gives a sufficiently smooth solution of (1)-(3) and a new formula for the expansion of an arbitrary vector function in terms of fundamental functions of a spectral problem corresponding to the problem (1)-(3). Two examples are presented. The proofs are based on the former investigations of the author [Ref 1].

There are 3 Soviet references.

ASSOCIATION: L'vovskiy gosudarstvennyy universitet imeni Ivana Franko (L'vov State University imeni Ivan Franko)

PRESENTED: November 20, 1957, by S.L. Sobolev, Academician

SUBMITTED: November 18, 1957

Card 2/2 1. Mathematics 2. Topology 3. Matrix algebra

AUTHOR: Rasulov, M.L.

SOV/20-120-2-7/63

TITLE: A Formula for the Expansion of an Arbitrary Function as a Series in Terms of the Fundamental Functions of a Class of Boundary Value Problems for Partial Linear Differential Equations With a Parameter (Formula razlozheniya proizvol'noy funktsii v ryad po fundamental'nym funktsiyam odnogo klassa granichnykh zadach s parametrom dlya lineynykh differentsiyal'nykh urevneniy s chastnymi proizvodnymi)

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol 120, Nr 2, pp 252-255 (USSR)

ABSTRACT: Let D be a bounded domain of the points $x = (x_1, \dots, x_n)$ which is the Cartesian product of the domains $D_1: \tilde{x} = (x_1, \dots, x_s)$ and $D_2: \tilde{x} = (x_{s+1}, \dots, x_n)$. In D the equation

$$(1) \quad L_1(\tilde{x}, \frac{\partial}{\partial \tilde{x}}, \lambda)v + a(\tilde{x})L_2(\tilde{x}_2, \frac{\partial}{\partial \tilde{x}})v = f(x)$$

is considered, where L_1 and L_2 are linear differential operators and L_1 has the form

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A Formula for the Expansion of an Arbitrary Function as a Series /20-120-2-7/63
 in Terms of the Fundamental Functions of a Class of Boundary
 Value Problems for Partial Linear Differential Equations With
 a Parameter.

$$L_1 = \sum_{k=0}^{mk+1=p} \lambda^{mk} A_{kl_1 \dots l_s}(x) \frac{\partial^l}{\partial x_1^{l_1} \dots \partial x_s^{l_s}} \lambda^p, \quad p=mq.$$

The author shows that, under very numerous assumptions, a certain boundary value problem for (1) has a solution $v(x, f, \lambda)$ which can be represented as an infinite series of integrals. From this representation then it follows that for an arbitrary $f \in L_2(D)$ under the given assumptions there holds

$$(2) \quad -\frac{1}{2\pi i} \sum_{k=1}^{\infty} \sum_{j=1}^{\infty} \int_{d_{kj}} \lambda^{m(s+1)-1} v(x, \lambda) d\lambda = \begin{cases} 0 & \text{for } s < q-1 \\ f(x) & \text{for } s = q-1. \end{cases}$$

Here d_{kj} is a simple contour of the λ -plane which circulates

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SCV

A Formula for the Expansion of an Arbitrary Function as a Series /20-120-2-7/63
in Terms of the Fundamental Functions of a Class of Boundary
Value Problems for Partial Linear Differential Equations With
a Parameter

around a single pole of the Green's function of the problem.
(2) is a generalization of an older formula due to Tamarkin
[Ref 1].

There are 2 references, 1 of which is Soviet and 1 German.

ASSOCIATION: L'vovskiy gosudarstvennyy universitet imeni Ivana-Franko
(L'vov State University imeni Ivan Franko)

PRESENTED: November 20, 1957, by S.L.Sobolev, Academician

SUBMITTED: November 18, 1957

- 1. Topology
- 2. Linear equations
- 3. Differential equations
- 4. Functions

Card 3/3

RAGULOV, N. M., Doc of Phys-Math Sci -- (disc) "Computer Method of Solving Mixed and Contiguous Problems for Linear Differential Equations with Partial Derivatives," L'vov, 1959, 12 pp. (Mathematics Inst im V. A. Steklov) (KL, 2-60, 110)

SOV/2660

PLATE 1 BOOK EXPOSITION

16(1) Vsesoznayushchaya Akademicheskaya "Yzdat." 3rd, Moscow, 1956

Frody, T. A. Matematicheskie seshionnye dokladov. Doklady International'noj uchenyj konferencii (Transactions of the 3rd All-Union Mathematical Conference in Moscow). Vol. 1. Summary of decisions of Foreign Scientists (Report of Foreign Scientists) Moscow, Izd-vo Akademiya Nauk SSSR, 1959. 277 pp. 2,200 copies printed.

Sponsoring Agency: Akademiya Nauk SSSR. Matematicheskij Institut.

Techn. Ed.: G.M. Shevelevko, Editorial Board: A.A. Abramov, V.G. Bol'shakov, A.M. Basilev, B.V. Medvedev, A.D. Myshkin, S.M. Silov, I.S. Skopinskij (Sovsp. Ed.), Yu. D. Prokhorov, Yu. V. Frolov, K.A. Stepanov, P. L. Ul'yanov, V.E. Uspenskiy, M.D. Chetayev, G. Ye. Shilov, and A.I. Shirshov.

PURPOSE: This book is intended for mathematicians and physicists.

CONTENTS: The book is Volume IV of the Transactions of the Third All-Union Mathematical Conference, held in June and July 1956. The contents is divided into two main parts. The first part contains summaries of the papers presented by Soviet scientists at the Conference that were not included in the first two volumes. The second part contains the text of reports submitted by the editor to non-Soviet scientists. In those cases when the non-Soviet scientist did not submit a copy of his paper to the editor, the title of the paper is cited and, if the paper was printed in a previous volume, reference is made to the appropriate volume. The papers, both Soviet and non-Soviet, cover various topics in number theory, algebra, differential and integral equations, function theory, mathematical logic, probability theory, topology, mathematical, functional analysis, mechanics and physics, computational mathematics, problems of mechanics and the foundations of mathematics, and the history of mathematics.

Schelekhov, D.V. (Krasnodar). On the generalization of the

theory of linear integral equations of I.M. Savarov 33

Semenov, L.S. (Leningrad). Certain formulas of the Predel problem and their application to the problem on the evaluation of error of approximate methods of solution of integral equations 34

Shishik, L.B. (Moscow). Two modifications of the concept of a dynamic system on the plane 35

Smirnov, O.I. (Moscow). Asymptotic expansions of the solution of partial differential equations in powers of a small parameter at highest derivative 36

Sokolov, N.N. (L'vov). Subtraction method for the solution of boundary value and mixed problems 36

Sosulin, V.A. (Kharkov). On integral equations with exponential nonlinearity 37

Card 8/3

16(1)

AUTHOR:

Rasulov, M.L. (L'vov)

SOV/39-48-3-2/5

TITLE:

Residuum Method for the Solution of Mixed Problems for
 Differential Equations and a Formula for the Expansion of an
 Arbitrary Vector Function in Terms of Fundamental Functions of
 a Boundary Value Problem With Parameter

PERIODICAL: Matematicheskiy sbornik, 1959, Vol 48, Nr 3, pp 277-310 (USSR)

ABSTRACT: The author investigates the problem

$$(1.1) \quad \frac{\partial^q u}{\partial t^q} = \sum_{\substack{k \leq q-1 \\ mk+l \leq p}} A_{kl}(x) \frac{\partial^{k+1} u}{\partial t^k \partial x^l} + f(x, t)$$

$$(1.2) \quad \sum_{\substack{k \leq q \\ l \leq p-1}} \left\{ P_{kl} \left. \frac{\partial^{k+1} u}{\partial t^k \partial x^l} \right|_{x=a} + Q_{kl} \left. \frac{\partial^{k+1} u}{\partial t^k \partial x^l} \right|_{x=b} \right\} = 0$$

$$(1.3) \quad \left. \frac{\partial^k u}{\partial t^k} \right|_{t=0} = \phi_k(x) \quad (k = 0, \dots, q-1).$$

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where m, q, p are integer ; $p = m-q$; $A_{kl}(x)$ an $n \times n$ matrix ;
 f, ϕ, u n -dimensional columns defined on $[a, b]$; P_{kl}, Q_{kl}
 constant $np \times n$ matrices.

By the transformation (1.4) $\frac{\partial^i u}{\partial t^i} = u^{(i)}$ ($i = 0, 1, \dots, q-1$)

(1.1) - (1.3) are transformed into :

$$(1.5) \frac{\partial u^{(0)}}{\partial t} = u^{(1)}, \dots, \frac{\partial u^{(q-2)}}{\partial t} = u^{(q-1)}, \frac{\partial u^{(q-1)}}{\partial t} = \\ = \sum_{\substack{k \leq q-1 \\ mk+1 \leq p}} A_{kl}(x) \frac{\partial^l u^{(k)}}{\partial x^l} + f(x, t)$$

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Residuum Method for the Solution of Mixed Problems SOV/39-48-3-2/5
 for Differential Equations and a Formula for the Expansion of an Arbitrary
 Vector Function in Terms of Fundamental Functions of a Boundary Value
 Problem With Parameter

under correspondingly varied initial- and boundary conditions
 (1.6) and (1.7).

The problem

$$(3.1) \quad v^{(1)} - \lambda^m v^{(0)} = \psi_0(x), \dots, v^{(q-1)} - \lambda^m v^{(0)} = \psi_{q-2}(x),$$

$$\begin{matrix} , \\ k \leq q-1 \\ mk+l \leq p \end{matrix} \quad A_{kl}(x) \frac{d^l v^{(k)}}{dx^l} - \lambda^m v^{(q-1)} = \psi_{q-1}(x)$$

with the boundary condition

$$(3.2) \quad \left. \begin{matrix} \nearrow \\ k \leq q-1 \\ 1 \leq p-1 \end{matrix} \right\} \left. \begin{matrix} P_{kl} \frac{d^l v^{(k)}}{dx^{(1)}} \\ + Q_{kl} \frac{d^l v^{(k)}}{dx^{(1)}} \end{matrix} \right|_{x=a} + \left. \begin{matrix} \\ \\ \nearrow \\ x=b \end{matrix} \right\} +$$

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Residuum Method for the Solution of Mixed Problems SOV/39-48-3-2/5
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 Problem With Parameter

$$+ \lambda^m \sum_{l=0}^{p-1} \left\{ P_{ql} \frac{d^{l+1} v(q-1)}{dx^{l+1}} \Big|_{x=a} + Q_{ql} \frac{d^{l+1} v(q-1)}{dx^{l+1}} \Big|_{x=b} \right\} = 0$$

is denoted as the spectral problem corresponding to the problem
 (1.5) - (1.7).

Under certain suppositions now it is proved that

$$(3.19) \quad \phi_s(x) = - \frac{1}{2\pi i \sqrt{-1}} \sum_{s \in c_\lambda} \left\{ \lambda^{m-1} v(s)(x, \lambda) d\lambda \right\}$$

holds, where c_λ circulates only one pole λ_s of the integrand, the summation is carried out over all poles, and the equality is understood in the sense of $L_2[a, b]$.

From this main result now it follows that a sufficiently

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 Value Problem With Parameter

smooth solution of (1.1) - (1.3) is representable in the form

$$(4.1) \quad u(x, t) = -\frac{1}{2\pi i} \sum_{c_v} \int_{\gamma-1}^{\gamma+1} \left\{ \lambda^{m-1} e^{\lambda^m t} d\lambda \right\} \left\{ \begin{array}{l} b \\ a \end{array} \right\} G(x, \xi, \lambda) (F_o(\xi, \phi, \lambda) + \int_0^t e^{-\lambda^m \tau} f(\xi, \tau) d\tau) d\xi + \Delta_o(x, \phi, \lambda)$$

Here $F_o(\xi, \phi, \lambda^m)$ is explicitly given by (3.8), $\Delta_o(x, \phi, \lambda)$ is the solution of a spectral problem corresponding to the homogeneous system and $G(x, \xi, \lambda)$ is the Green matrix.

Altogether the author gives six theorems and two lemmata.

There are 18 references, 10 of which are Soviet, 3 American, 3 French, and 2 German.

SUBMITTED: November 27, 1956

Card 5/5

16(1)

AUTHOR:

Rasulov, M.L.

SOV/20-125-1-9/67

TITLE:

Asymptotic Representation of the Solutions of Boundary Value Problems With a Complex Parameter for Equations of Elliptic Type
(Asimptoticheskoye predstavleniye resheniy granichnykh zadach s kompleksnym parametrom dlya uravneniy ellipticheskogo tipa)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 1, pp 42-45 (USSR)

ABSTRACT: In section 1 of the paper the author gives an asymptotic representation of the fundamental solution $P(x, y, \lambda)$ (having a singularity in the point $x=y$) of the equation

$$(1) \quad L(x, \frac{\partial}{\partial x})u - \lambda^2 c(x)u = 0,$$

where $L(x, \frac{\partial}{\partial x}) = \sum_{i=1}^3 \frac{\partial^2}{\partial x_i^2} + \sum_{i=1}^3 a_i(x) \frac{\partial}{\partial x_i} + a(x)$. Here for the

derivatives of the fundamental solution there hold certain estimations. In the section 2 the author seeks that solution

$u(x, \lambda)$ of (1) which satisfies the condition $\lim_{x \rightarrow z} B(z, \frac{d}{dn_z}, \lambda^2)u(x, \lambda) =$

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Asymptotic Representation of the Solutions of
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SOV/20-125-1-9/87

$$= \Psi(z), z \in \Gamma, \text{ if } B(z, \frac{d}{dn_z}, \lambda^2)u(x) = \alpha_1(z) \frac{du(x)}{dn_z} + \lambda^2 \alpha_2(z) \left(\frac{du(x)}{dn_z} \right) +$$

+ \alpha_3(z)u(x) + \alpha_4(z)u(x) \text{ and } n_z \text{ is the normal to the boundary}

Γ in the point $z \in \Gamma$. The existence of the sought solution is proved and it is shown that it can be expressed by a double integral with the aid of $P(x, y, \lambda)$.

There are 4 references, 3 of which are Soviet, and 1 German.

ASSOCIATION: L'vovskiy gosudarstvennyy universitet imeni Ivana Franko
(L'vov State University imeni Ivan Franko)

PRESENTED: November 19, 1958, by S.L. Sobolev, Academician

SUBMITTED: November 18, 1958

Card 2/2

7

6(:)

AUTHOR: Rasulov, M.L.

SOV/20-125-2-8/64

TITLE: The Method of the Line Integral for the Solution of Mixed Problems (Metod konturnogo integrala dlya resheniya smeshannykh zadach)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 2, pp 273-276 (USSR)

ABSTRACT: The author proposes a new method for the solution of mixed boundary value problems. At first, according to his publication [Ref 1], he formulates the corresponding spectral problem. Then that part of the complex λ -plane is determined in which the spectral problem has a solution $u(x, \lambda)$ which does not increase for large λ . According to the author's paper [Ref 2] for this solution there holds a certain estimation by λ . The estimation is used in order to show that there exists a solution of the initial problem and that it can be represented by a line integral with respect to λ .

There are 2 Soviet references.

ASSOCIATION: L'vovskiy gosudarstvennyy universitet imeni Ivana Franko (L'vov State University imeni Ivan Franko)

PRESENTED: November 19, 1958, by S.L. Sobolev, Academician

SUBMITTED: November 16, 1958

Card 1/1

16(1)

AUTHOR: Rasulov, M.L.

SOV/20-128-3-12/58

TITLE: An Effective Solution of Mixed Problems for Parabolic Equations

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 3, pp 478-481 (USSR)

ABSTRACT: The author considers the mixed problem

$$(1) \quad c(x)(b_0(t)\frac{\partial}{\partial t} + b_1(t))v = L(x, \frac{\partial}{\partial x})v + f(x, t)$$

$$(2) \quad \lim_{x \rightarrow y} (\frac{d}{dn} + \alpha(y))v(x, t) = 0, \quad y \in \Gamma$$

$$(3) \quad v(x, 0) = \varphi(x),$$

where Γ is the boundary of the 3-dimensional domain D ,

$$x = (x^{(1)}, x^{(2)}, x^{(3)}) \text{ and } L(x, \frac{\partial}{\partial x}) = \sum_{i=1}^3 (\frac{\partial^2}{\partial x^{(i)} \partial x^{(i)}} + a_i(x) \frac{\partial}{\partial x^{(i)}}) + a(x),$$

d/dn_y the derivative with respect to the normal to Γ in $y \in \Gamma$.

The author assumes that $a_i(x), a(x)$ is continuous in \bar{D} , $c(x)$

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SOV/20-128-3-12/5

An Effective Solution of Mixed Problems for Parabolic Equations

continuously differentiable, $\sqrt{c(x)} \geqslant \lambda$; $b_i(t)$ continuous
in $(0, T)$, $\int_0^t b_i^{-1}(\tau) d\tau > 0$ for $t > 0$; $\varphi(x)$, $f(x, t)$ continuously
differentiable in $x \in D$, $t \in [0, T]$ and vanish in the boundary
strip of D ; $d(y)$ continuous on Γ , Γ Lyapunov surface.
The author uses the integral representation of the solution
 $v(x, t)$ obtained by him in [Ref 1, 2] and from this he
attains a very complicated, effectively calculable ex-
pression for $v(x, t)$ by infinite sums of multiple integrals.
There are 2 Soviet references.

ASSOCIATION: L'vovskiy gosudarstvennyy universitet imeni Ivana Franko
(L'vov State University imeni Ivan Franko)

PRESENTED: May 27, 1959, by S.L. Sobolev, Academician

SUBMITTED: May 22, 1959

Card 2/2

68796
S/020/60/131/01/005/060

46(1) 16.3500

AUTHOR: Rasulov, M.L.

TITLE: The Use of the Line Integral in Solving Mixed Problems for Equations With Discontinuous Coefficients

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 131, Nr 1, pp 24-26 (USSR)

ABSTRACT: For the equations

$$(1) \quad c^{(i)}(x)M(t, \frac{\partial}{\partial t})v^{(i)} = L^{(i)}(x, \frac{\partial}{\partial x})v^{(i)} + f^{(i)}(x, t), \quad x \in D_i,$$

where it is

$$M = b_0(t) \frac{\partial}{\partial t} + b_1(t); \quad L^{(i)}(x, \frac{\partial}{\partial x}) = \sum_{k=1}^3 \frac{\partial^2}{\partial x_k^2} + a_k^{(i)}(x) \frac{\partial}{\partial x_k} + a(x);$$

i = 1, 2, the author considers the mixed boundary value problem in a closed domain with very complicated boundary conditions. He gives assumptions for the existence of a solution and explicitly represents these by integrals. Altogether he formulates

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68796

The Use of the Line Integral in Solving Mixed S/020/60/131/01/005/C60
Problems for Equations With Discontinuous Coefficients

two theorems and two longer lemmata. According to the author
the proofs are based on the application of the method of the
curve integral proposed by him in [Ref 1 - 3].
There are 3 Soviet references.

PRESENTED: November 5, 1959, by S.L. Sobolev, Academician

SUBMITTED: November 3, 1959

X

Card 2/2

RASULOV, M.L.

Conditions for the correctness of one-dimensional mixed problems.
Dokl. AN SSSR 139 no.2:305-308 Jl '61. (MIRA 14:7)

1. Azerbaydzhanskiy gosudarstvenny universitet im. S.M. Kirova.
Predstavлено академиком N.I. Muskhelishvili.
(Boundary value problems) (Differential equations)

ACC NR: AP6056296

SOURCE CODE: UR/0376/66/002/009/1201/1213

AUTHOR: Nasulov, M. B.

ORG: Azerbaijan State University im. S. M. Kirov (Azerbaydzhanskiy gosudarstvennyy universitet)

TITLE: An application of the contour integral method to the solution of combination problems with boundary conditions of a combination type

SOURCE: Differentsial'nyye uravneniya, v. 2, no. 9, 1966, 1201-1213

TOPIC TROS: Green function, contour integration, contour integral, combinatorial analysis, differential equation

ABSTRACT: The contour integral method is applied to the solution of a three-dimensional combination problem. The prototype problem may be written as

$$c(x) \frac{\partial v}{\partial t} = \sum_{i=1}^3 \left[\frac{\partial}{\partial x_i} \left(k \frac{\partial v}{\partial x_i} \right) + a_i(x) \frac{\partial v}{\partial x_i} \right] + \\ + a(x)v + f(x, t)$$

in the three-dimensional bounded domain D with boundary Γ' , a Lyapunov surface with boundary conditions

$$v(y, t) = V_1(y) \text{ npu } y \in \Gamma_M$$

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UDC: 517.946.91

ACC NR: AP603629C

$$\lim_{t \rightarrow 0} B \left(y, \frac{d}{dn_y}, -\frac{\partial}{\partial t} \right) v(x, t) = V_1(y) \quad \text{pm} \quad y \in \Gamma_2$$

and initial condition

$$v(x, 0) = \Phi(x), \quad x \in D,$$

where in the domain $D + \Gamma$ the function $a(x)$ is continuous, and $c(x)$, $k(x)$, $a_i(x)$ are continuously differentiable; $c(x), k(x) > 0$; Γ_1 is a conjugate part of the surface

$\Gamma_1, \Gamma_2 = \Gamma - \Gamma_1$, and

$$B \left(y, \frac{d}{dn_y}, -\frac{\partial}{\partial t} \right) = \left(a_1(y) + a_2(y) \frac{\partial}{\partial t} \right) \frac{d}{dn_y}$$

where $a_i(y)$ are continuous differentiable functions in Γ and one of which does not go to zero; n_y is the direction of the normal at the point y . The author first considers the relationship of Green's functions of conjugate spectral problems, and presents the solution of the basic spectral problem for the uniform equation in the form of the sum of potentials. The solution of the problem using contour integration is of the form

$$v(x, t) = \frac{1}{\pi i} \int_S \left[\frac{u_1(x, \lambda)}{\lambda} + \right. \\ \left. + \lambda \int_D \int_D G(x, \xi, \lambda) [\varphi(\xi) c(\xi) + \right]$$

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ACC NR. 1P6326370

$$+ \int_0^t e^{-\lambda t} f(\xi, \tau) d\tau \Big] d\xi \Big| c^{1/4} d\lambda.$$

The proof that the solution is of this form is similar to the proofs for theorems 38 and 39, as stated previously by M. L. Wasulov (Metod konturnogo integrala. Izd. Nauka, 1964). Orig. art. has: 69 equations.

SUB CODE: 12/ SUBM DATE: 15Apr66/ ORIG REF: 006

Card 3/3

L 62604-65 EWT(d)/T IJP(c)

ACCESSION NR: AT5018045

UR/9033/63/000/003/0003/0006

AUTHOR: Rasulov, M. L. 55

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13

TITLE: Application of residue method to solution of mixed problems

SOURCE: Baku. Azerbaydzheanskiy gosudarstvennyy universitet. Uchenyye zapiski.
Seriya fiziko-matematicheskikh nauk, no. 3, 1963, 3-6

TOPIC TAGS: differential equation

ABSTRACT: The author proves the following theorem. Suppose that for any function
 $\Phi(x)$ sufficiently smooth on $[a, b]$, we have the decomposition

$$\Phi(x) = \frac{-1}{2\pi\sqrt{-1}} \sum \int_{c_v} d\lambda \int_a^b G(x, t, \lambda) \Phi(t) dt, \quad (1)$$

where G is the Green's function of

$$L \left(x, \frac{\partial}{\partial x} \right) y - \lambda y = \Phi(x), \quad (2)$$

$$L_i y = 0 \quad (i = 1, 2, \dots, P) \quad (3)$$

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L 62664-65
ACCESSION NR: AT5018045

and where $L\left(x, \frac{\partial}{\partial x}\right)$ is a linear differential expression in x of order p with continuous coefficients on $[a, b]$. Suppose further that the function $z(t, \xi, \lambda)$ does not have a singular point which is a pole of the function $G(x, \xi, \lambda)$. Then every sufficiently smooth solution of

$$M_1\left(t, \frac{\partial}{\partial t}\right)u = M_0\left(t, \frac{\partial}{\partial t}\right)L\left(x, \frac{\partial}{\partial x}\right)u + f(x, t), \quad (4)$$

$$\int L_1 y = \sum_{j=1}^P \left\{ \varphi_{ij} \left. \frac{\partial^{j-1} u}{\partial x^{j-1}} \right|_{x=a} + \beta_{ij} \left. \frac{\partial^{j-1} u}{\partial x^{j-1}} \right|_{x=b} \right\} = 0, \quad (i = 1, \dots, P), \quad (5)$$

$$\left. \frac{\partial^\kappa u}{\partial t^\kappa} \right|_{t=0} = \varphi_\kappa(x) \quad (\kappa = 0, 1, \dots, q-1). \quad (6)$$

where $M_1\left(t, \frac{\partial}{\partial t}\right)$ are linear differential expressions in t with continuous coefficients on $[0, T]$ and q is the larger of the orders of the differential expressions M_1 , can be represented by the formula

$$U(x, t) = \frac{-1}{2\pi\sqrt{-1}} \sum \int_a^b d\lambda \int_a^b G(x, t, \lambda) z(t, \lambda) dt. \quad (7)$$

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L 6266u-65
ACCESSION NR: AT5018045

Q

The author considers two examples of mixed problems. Orig. art. has: 17 formulas.

ASSOCIATION: Azerbaydzhanskiy gosudarstvennyy universitet (Azerbaijan State University) 55

SUBMITTED: 00

ENCL: 00

SUB CODE: MA

NO REF SOV: 004

OTHER: 001

282
Card 3/3

RAGULOV, Medzhid I.

[Boundary integral method and its application to the study of problems for differential equations] Metod konturnogo integrала i ego primenenie k issledovaniyu zadach dlia differential'nykh uravnenii. Moskva, Nauka, 1964. 452 p. (NKA 18:1)

Paris, 6.1.

One of the method of neutrino in solving fixed problems. Wch.
2001. Attn. Secr. Tiz.-test. mark no.3;34-0145.

(MIRA 19712)

RASULOV, M.L.

Fundamental solution of a system of equations involving a complex parameter in the theory of elasticity. Uch. zap. AGU. Ser. fiz.-mat. i khim. nauk. no.5:15-21 '61. (MIRA 16:6)
(Elasticity) (Differential equations)

RASULOV, M.L.

Method of residues and method of contour integrals in solving
mixed problems. Trudy Mat. inst. AN Gruz. SSR 28:171-183 '62.
(MIRA 16:8)

(Boundary value problems)
(Integrals)

L 12462-63

EWT(a)/FCC(w)/BDS AFFTC Pg-4 IJP(c)

S/039/63/060/004/001/004

55

AUTHOR: Rasulov, M.L. (Baku)

TITLE: Method of contour integral and its application to the solution
of multidimensional mixed problems for differential equations
of the parabolic type |6

PERIODICAL: Matematicheskiy sbornik, novaya seriya, v. 60 (102), no. 4,
1963, 393-410

TEXT: For the theory of the equations of the parabolic type, the literature deals primarily with mixed problems in the finite regions. A new method for the solution of mixed problems for differential equations of the parabolic type is given. Because the contour integral obtained for the solution of the examined mixed problems at $t > 0$ converges with great speed, the proposed method is very expedient and natural for application to the solution of mixed problems (for infinite regions), which contain in boundary conditions a derivative according to time. An analytical presentation is made for the

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